

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION

March 24, 2017

PERMIT TO INSTALL  
185-15A

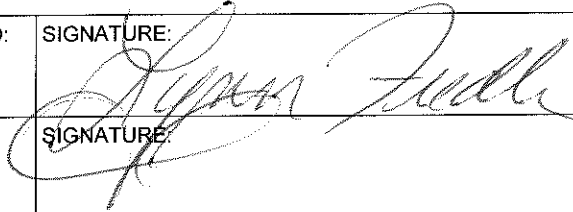
ISSUED TO  
DTE Gas Company, Milford Compressor Station

LOCATED AT  
3515 Childs Lake Road  
Milford, Michigan

IN THE COUNTY OF  
Oakland

STATE REGISTRATION NUMBER  
B7221

The Air Quality Division has approved this Permit to Install, pursuant to the delegation of authority from the Michigan Department of Environmental Quality. This permit is hereby issued in accordance with and subject to Section 5505(1) of Article II, Chapter I, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Pursuant to Air Pollution Control Rule 336.1201(1), this permit constitutes the permittee's authority to install the identified emission unit(s) in accordance with all administrative rules of the Department and the attached conditions. Operation of the emission unit(s) identified in this Permit to Install is allowed pursuant to Rule 336.1201(6).

DATE OF RECEIPT OF ALL INFORMATION REQUIRED BY RULE 203: <b>February 15, 2017</b>	
DATE PERMIT TO INSTALL APPROVED: <b>March 24, 2017</b>	SIGNATURE: 
DATE PERMIT VOIDED:	SIGNATURE:
DATE PERMIT REVOKED:	SIGNATURE:

## PERMIT TO INSTALL

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**Common Abbreviations / Acronyms**

Common Acronyms		Pollutant / Measurement Abbreviations	
AQD	Air Quality Division	acfm	Actual cubic feet per minute
BACT	Best Available Control Technology	BTU	British Thermal Unit
CAA	Clean Air Act	°C	Degrees Celsius
CAM	Compliance Assurance Monitoring	CO	Carbon Monoxide
CEM	Continuous Emission Monitoring	CO <sub>2e</sub>	Carbon Dioxide Equivalent
CFR	Code of Federal Regulations	dscf	Dry standard cubic foot
COM	Continuous Opacity Monitoring	dscm	Dry standard cubic meter
Department/ department	Michigan Department of Environmental Quality	°F	Degrees Fahrenheit
EU	Emission Unit	gr	Grains
FG	Flexible Group	HAP	Hazardous Air Pollutant
GACS	Gallons of Applied Coating Solids	Hg	Mercury
GC	General Condition	hr	Hour
GHGs	Greenhouse Gases	HP	Horsepower
HVLP	High Volume Low Pressure*	H <sub>2</sub> S	Hydrogen Sulfide
ID	Identification	kW	Kilowatt
IRSL	Initial Risk Screening Level	lb	Pound
ITSL	Initial Threshold Screening Level	m	Meter
LAER	Lowest Achievable Emission Rate	mg	Milligram
MACT	Maximum Achievable Control Technology	mm	Millimeter
MAERS	Michigan Air Emissions Reporting System	MM	Million
MAP	Malfunction Abatement Plan	MW	Megawatts
MDEQ	Michigan Department of Environmental Quality	NMOC	Non-methane Organic Compounds
MSDS	Material Safety Data Sheet	NO <sub>x</sub>	Oxides of Nitrogen
NA	Not Applicable	ng	Nanogram
NAAQS	National Ambient Air Quality Standards	PM	Particulate Matter
NESHAP	National Emission Standard for Hazardous Air Pollutants	PM <sub>10</sub>	Particulate Matter equal to or less than 10 microns in diameter
NSPS	New Source Performance Standards	PM <sub>2.5</sub>	Particulate Matter equal to or less than 2.5 microns in diameter
NSR	New Source Review	pph	Pounds per hour
PS	Performance Specification	ppm	Parts per million
PSD	Prevention of Significant Deterioration	ppmv	Parts per million by volume
PTE	Permanent Total Enclosure	ppmw	Parts per million by weight
PTI	Permit to Install	psia	Pounds per square inch absolute
RACT	Reasonable Available Control Technology	psig	Pounds per square inch gauge
ROP	Renewable Operating Permit	scf	Standard cubic feet
SC	Special Condition	sec	Seconds
SCR	Selective Catalytic Reduction	SO <sub>2</sub>	Sulfur Dioxide
SNCR	Selective Non-Catalytic Reduction	TAC	Toxic Air Contaminant
SRN	State Registration Number	Temp	Temperature
TEQ	Toxicity Equivalence Quotient	THC	Total Hydrocarbons
USEPA/EPA	United States Environmental Protection Agency	tpy	Tons per year
VE	Visible Emissions	µg	Microgram
		µm	Micrometer or Micron
		VOC	Volatile Organic Compounds
		yr	Year

\*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

### GENERAL CONDITIONS

1. The process or process equipment covered by this permit shall not be reconstructed, relocated, or modified, unless a Permit to Install authorizing such action is issued by the Department, except to the extent such action is exempt from the Permit to Install requirements by any applicable rule. **(R 336.1201(1))**
2. If the installation, construction, reconstruction, relocation, or modification of the equipment for which this permit has been approved has not commenced within 18 months, or has been interrupted for 18 months, this permit shall become void unless otherwise authorized by the Department. Furthermore, the permittee or the designated authorized agent shall notify the Department via the Supervisor, Permit Section, Air Quality Division, Michigan Department of Environmental Quality, P.O. Box 30260, Lansing, Michigan 48909-7760, if it is decided not to pursue the installation, construction, reconstruction, relocation, or modification of the equipment allowed by this Permit to Install. **(R 336.1201(4))**
3. If this Permit to Install is issued for a process or process equipment located at a stationary source that is not subject to the Renewable Operating Permit program requirements pursuant to R 336.1210, operation of the process or process equipment is allowed by this permit if the equipment performs in accordance with the terms and conditions of this Permit to Install. **(R 336.1201(6)(b))**
4. The Department may, after notice and opportunity for a hearing, revoke this Permit to Install if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of this permit or is violating the Department's rules or the Clean Air Act. **(R 336.1201(8), Section 5510 of Act 451, PA 1994)**
5. The terms and conditions of this Permit to Install shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by this Permit to Install. If the new owner or operator submits a written request to the Department pursuant to R 336.1219 and the Department approves the request, this permit will be amended to reflect the change of ownership or operational control. The request must include all of the information required by subrules (1)(a), (b), and (c) of R 336.1219 and shall be sent to the District Supervisor, Air Quality Division, Michigan Department of Environmental Quality. **(R 336.1219)**
6. Operation of this equipment shall not result in the emission of an air contaminant which causes injurious effects to human health or safety, animal life, plant life of significant economic value, or property, or which causes unreasonable interference with the comfortable enjoyment of life and property. **(R 336.1901)**
7. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the Department. The notice shall be provided not later than two business days after start-up, shutdown, or discovery of the abnormal condition or malfunction. Written reports, if required, must be filed with the Department within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal condition or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5). **(R 336.1912)**
8. Approval of this permit does not exempt the permittee from complying with any future applicable requirements which may be promulgated under Part 55 of 1994 PA 451, as amended or the Federal Clean Air Act.
9. Approval of this permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.
10. Operation of this equipment may be subject to other requirements of Part 55 of 1994 PA 451, as amended and the rules promulgated thereunder.

11. Except as provided in subrules (2) and (3) or unless the special conditions of the Permit to Install include an alternate opacity limit established pursuant to subrule (4) of R 336.1301, the permittee shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of density greater than the most stringent of the following. The grading of visible emissions shall be determined in accordance with R 336.1303. **(R 336.1301)**
  - a) A six-minute average of 20 percent opacity, except for one six-minute average per hour of not more than 27 percent opacity.
  - b) A visible emission limit specified by an applicable federal new source performance standard.
  - c) A visible emission limit specified as a condition of this Permit to Install.
  
12. Collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in R 336.1370(2). **(R 336.1370)**
  
13. The Department may require the permittee to conduct acceptable performance tests, at the permittee's expense, in accordance with R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001. **(R 336.2001)**

**SPECIAL CONDITIONS**

**EMISSION UNIT SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

<b>Emission Unit ID</b>	<b>Emission Unit Description (Process Equipment &amp; Control Devices)</b>	<b>Installation Date / Modification Date</b>	<b>Flexible Group ID</b>
EUTURBINE1	A nominally rated 10,504 HP (ISO), simple-cycle natural gas-fired combustion turbine (CT) for compressing natural gas. The CT is equipped with dry ultra-low NO <sub>x</sub> burners and a combustion air inlet filter.	TBD	FGTURBINES
EUTURBINE2	A nominally rated 10,504 HP (ISO), simple-cycle natural gas-fired combustion turbine (CT) for compressing natural gas. The CT is equipped with dry ultra-low NO <sub>x</sub> burners and a combustion air inlet filter.	TBD	FGTURBINES
EUTURBINE3	A nominally rated 10,504 HP (ISO), simple-cycle natural gas-fired combustion turbine (CT) for compressing natural gas. The CT is equipped with dry ultra-low NO <sub>x</sub> burners and a combustion air inlet filter.	TBD	FGTURBINES
EUTURBINE4	A nominally rated 10,504 HP (ISO), simple-cycle natural gas-fired combustion turbine (CT) for compressing natural gas. The CT is equipped with dry ultra-low NO <sub>x</sub> burners and a combustion air inlet filter.	TBD	FGTURBINES
EUTURBINE5	A nominally rated 10,504 HP (ISO), simple-cycle natural gas-fired combustion turbine (CT) for compressing natural gas. The CT is equipped with dry ultra-low NO <sub>x</sub> burners and a combustion air inlet filter.	TBD	FGTURBINES
EUAUXBOIL2A	A natural gas-fired auxiliary boiler, rated at 3 MMBTU/hr, for heating purposes in Auxiliary Building 2. The auxiliary boiler is equipped with ultra-low NO <sub>x</sub> burners.	TBD	FGAUXBOILERS, FGNEWNGBOILMACT
EUAUXBOIL3A	A natural gas-fired auxiliary boiler, rated at 3 MMBTU/hr, for heating purposes in Auxiliary Building 3. The auxiliary boiler is equipped with ultra- low NO <sub>x</sub> burners.	TBD	FGAUXBOILERS, FGNEWNGBOILMACT
EUAUXBOIL2B	A natural gas-fired auxiliary boiler, rated at 3 MMBTU/hr, for heating purposes in Auxiliary Building 2. The auxiliary boiler is equipped with ultra-low NO <sub>x</sub> burners.	TBD	FGAUXBOILERS, FGNEWNGBOILMACT
EUAUXBOIL3B	A natural gas-fired auxiliary boiler, rated at 3 MMBTU/hr, for heating purposes in Auxiliary Building 3. The auxiliary boiler is equipped with ultra-low NO <sub>x</sub> burners.	TBD	FGAUXBOILERS, FGNEWNGBOILMACT

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID
EUAUXBOIL2C	A natural gas-fired auxiliary boiler, rated at 1 MMBTU/hr, used as a fuel gas heater in Auxiliary Building 2. The auxiliary boiler is equipped with ultra-low NO <sub>x</sub> burners.	TBD	FGAUXBOILERS, FGNEWNGBOILMACT
EUAUXBOIL3C	A natural gas-fired auxiliary boiler, rated at 1 MMBTU/hr, used as a fuel gas heater in Auxiliary Building 3. The auxiliary boiler is equipped with ultra-low NO <sub>x</sub> burners.	TBD	FGAUXBOILERS, FGNEWNGBOILMACT
EUN_EM_GEN	A nominally rated 1,300 electrical kilowatts (ekW) output emergency genset containing a 1,818 HP natural gas-fueled engine manufactured in 2011 or later. The engine is used to provide electrical power to the station and support equipment in the event power from the public utility grid system is lost. The engine is designed with low NO <sub>x</sub> technology (turbo charger and after cooler).	TBD	NA
EUHTR1	A natural gas-fired auxiliary heater, rated at 0.1 MMBTU/hr for comfort heating. The auxiliary heater is uncontrolled.	TBD	FGAUXHEATING
EUHTR2	A natural gas-fired auxiliary heater, rated at 0.1 MMBTU/hr for comfort heating. The auxiliary heater is uncontrolled.	TBD	FGAUXHEATING
EUHTR3	A natural gas-fired auxiliary heater, rated at 0.1 MMBTU/hr for comfort heating. The auxiliary heater is uncontrolled.	TBD	FGAUXHEATING
EUHTR4	A natural gas-fired auxiliary heater, rated at 0.1 MMBTU/hr for comfort heating. The auxiliary heater is uncontrolled.	TBD	FGAUXHEATING
EUWTRHTR	A natural gas-fired water heater, rated at 0.125 MMBTU/hr for water heating. The water heater is uncontrolled.	TBD	FGAUXHEATING
EUFURNACE	A natural gas-fired furnace, rated at 0.2075 MMBTU/hr for comfort heating. The furnace is uncontrolled.	TBD	FGAUXHEATING

Changes to the equipment described in this table are subject to the requirements of R 336.1201, except as allowed by R 336.1278 to R 336.1290.

**The following conditions apply to:**  
**EUN\_EM\_GEN**

**DESCRIPTION:** A nominally rated 1,300 electrical kilowatts (ekW) output emergency genset containing a 1,818 HP natural gas-fueled engine manufactured in 2011 or later. The engine is used to provide electrical power to the station and support equipment in the event power from the public utility grid system is lost. The engine is designed with low NO<sub>x</sub> technology (turbo charger and after cooler).

**Flexible Group ID:** NA

**POLLUTION CONTROL EQUIPMENT:** Low NO<sub>x</sub> Design (Turbo Charger and After Cooler).

**I. EMISSION LIMITS**

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NO <sub>x</sub>	4.0 pph	Test Protocol*	EUN_EM_GEN	SC V.2, SC VI.4	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
2. NO <sub>x</sub>	2.0 g/HP-hr OR 160 ppmvd	Test Protocol*	EUN_EM_GEN	SC V.1, SC VI.2	40 CFR 60.4233(e), Table 1 of 40 CFR Part 60 Subpart JJJJ
3. PM10	0.01 lb/MMBTU	Test Protocol*	EUN_EM_GEN	SC V.2, SC VI.4	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
4. PM2.5	0.01 lb/MMBTU	Test Protocol*	EUN_EM_GEN	SC V.2, SC VI.4	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
5. CO	11.0 pph	Test Protocol*	EUN_EM_GEN	SC V.2, SC VI.4	R 336.1205(1)(a) & (b), R 336.2804, R 336.2810
6. CO	4.0 g/HP-hr OR 540 ppmvd	Test Protocol*	EUN_EM_GEN	SC V.1, SC VI.2	40 CFR 60.4233(e), Table 1 of 40 CFR Part 60 Subpart JJJJ
7. GHGs as CO <sub>2</sub> e	247 tpy	12-month rolling time period as determined at the end of each calendar month.	EUN_EM_GEN	SC VI.8	R 336.1205(1)(a) & (b), 40 CFR 52.21(j)
8. VOC <sup>A</sup>	1.0 g/HP-hr OR 86 ppmvd	Test Protocol*	EUN_EM_GEN	SC V.1, SC VI.2	R 336.1205(1)(a) & (b), R 336.1702(a), 40 CFR 60.4233(e), Table 1 of 40 CFR Part 60 Subpart JJJJ

ppmvd = parts per million by volume at 15 percent oxygen and on a dry gas basis

\*Test Protocol shall specify averaging time.

<sup>A</sup>Per footnote “d” of Table 1 of 40 CFR Part 60 Subpart JJJJ, when calculating emissions of VOCs, emissions of formaldehyde should not be included.



## **II. MATERIAL LIMITS**

1. The permittee shall burn only pipeline quality natural gas in EUN\_EM\_GEN. **(R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j), 40 CFR 60.4233)**

## **III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall not operate EUN\_EM\_GEN for more than 205 hours per year on a 12-month rolling time period basis as determined at the end of each calendar month. The 205 hours includes the 100 hours as described in SC III.2. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j))**
2. The permittee may operate EUN\_EM\_GEN for no more than 100 hours per calendar year for the purpose of necessary maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. The permittee may petition the Department for approval of additional hours to be used for maintenance checks and readiness testing. A petition is not required if the permittee maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency internal combustion engines beyond 100 hours per calendar year. EUN\_EM\_GEN may operate up to 50 hours per calendar year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply non-emergency power as part of a financial arrangement with another entity, except as provided in paragraph 40 CFR 60.4243(d)(3)(i). **(40 CFR 60.4243(d))**
3. The permittee shall operate and maintain EUN\_EM\_GEN such that it meets the emission limits in SC I.2, SC I.6, and SC I.8 over the entire life of the engine. **(40 CFR 60.4234)**
4. If EUN\_EM\_GEN is a certified engine, according to procedures specified in 40 CFR Part 60 Subpart JJJJ, for the same model year, the permittee shall meet the following requirements for EUN\_EM\_GEN:
  - a. Operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions;
  - b. Meet the requirements as specified in 40 CFR Part 1068 Subparts A through D, as applicable, including labeling and maintaining certified engines according to the manufacturer's recommendations; and
  - c. Only change those engine settings that are permitted by the manufacturer.

If the permittee does not operate and maintain the certified engine and control device according to the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and be subject to SC III.5. **(40 CFR 60.4243(a) & (b)(1))**

5. If EUN\_EM\_GEN is a non-certified engine and control device or a certified engine operating in a non-certified manner, per 40 CFR Part 60 Subpart JJJJ, the permittee shall keep a maintenance plan for EUN\_EM\_GEN and shall, to the extent practicable, maintain and operate EUN\_EM\_GEN in a manner consistent with good air pollution control practice for minimizing emissions. **(40 CFR 60.4243(a)(2) & (b)(2))**

#### **IV. DESIGN/EQUIPMENT PARAMETERS**

1. The permittee shall equip and maintain EUN\_EM\_GEN with a non-resettable hours meter to track the operating hours. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j), 40 CFR 60.4237(a))**
2. The EUN\_EM\_GEN nameplate capacity shall not exceed 1,300 kW for the genset or 1,818 HP for the engine, as certified by the equipment manufacturer. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j), 40 CFR 60.4230)**
3. The permittee shall install, calibrate, maintain and operate, in a satisfactory manner, a device to monitor and record the fuel usage for EUN\_EM\_GEN on a continuous basis. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(j))**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. If EUN\_EM\_GEN is non-certified, is not installed, configured, operated, and maintained according to the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee must demonstrate compliance as follows:
  - a. Conduct an initial performance test to demonstrate compliance with the applicable emission standards in SC I.2, SC I.6, and SC I.8, within 60 days after achieving the maximum production rate at which EUN\_EM\_GEN will be operated, but not later than 180 days after initial startup of EUN\_EM\_GEN, or within 1 year after EUN\_EM\_GEN is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after changing emission-related settings in a way that is not permitted by the manufacturer.
  - b. If a performance test is required, the performance tests shall be conducted according to 40 CFR 60.4244.
  - c. Conduct subsequent performance testing every 8,760 hours of engine operation or every 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

If a performance test is required, no less than 30 days prior to testing, a complete test plan shall be submitted to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205(1)(a) & (b), R 336.1702(a), R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, R 336.2810, 40 CFR 60.8, 40 CFR 60.4243(a)(2)(iii) & (b)(2)(ii), 40 CFR 60.4244, 40 CFR 60.4245, 40 CFR Part 60 Subpart JJJJ)**

2. Upon request from the AQD District Supervisor, the permittee may be required to verify the NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> emission limits from EUN\_EM\_GEN by testing at owner's expense, in accordance with Department requirements. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission factors includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205(1)(a) & (b), R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, R 336.2810)**

## **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j), 40 CFR 60.4243, 40 CFR 60.4245)**
2. The permittee shall keep, in a satisfactory manner, the following records for EUN\_EM\_GEN:
  - a. If certified: The permittee shall keep records of the documentation from the manufacturer that the EUN\_EM\_GEN is certified to meet the emission standards and information as required in 40 CFR Parts 90, 1048, 1054, and 1060, as applicable.
  - b. If non-certified: The permittee shall keep records of testing required in SC V.1.

The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 60.4233(e), 40 CFR 60.4243, 40 CFR 60.4245(a))**

3. The permittee shall keep, in a satisfactory manner, the following records of maintenance activity for EUN\_EM\_GEN:
  - a. If certified: The permittee shall keep the manufacturer's emission-related written instructions and records demonstrating that EUN\_EM\_GEN has been maintained according to them, as specified in SC III.4.
  - b. If non-certified: The permittee shall keep records of a maintenance plan, as required by SC III.5, and maintenance activities.

The permittee shall keep all records on file and make them available to the Department upon request. **(40 CFR 60.4243, 40 CFR 60.4245(a), 40 CFR Part 60 Subpart JJJJ)**

4. The permittee shall keep, in a satisfactory manner, either vendor emissions guarantees for NO<sub>x</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> or the testing required in SC V.2, for EUN\_EM\_GEN. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810)**
5. The permittee shall monitor and record the total hours of operation and the hours of operation during non-emergencies for EUN\_EM\_GEN, on a monthly and 12-month rolling time period basis, in a manner acceptable to the District Supervisor, Air Quality Division. The permittee shall document how many hours are spent for emergency operation of EUN\_EM\_GEN, including what classified the operation as emergency and how many hours are spent for non-emergency operation. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j), 40 CFR 60.4243, 40 CFR 60.4245(b))**
6. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for EUN\_EM\_GEN on a monthly basis. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(j))**
7. The permittee shall keep records of all notifications submitted to comply with 40 CFR Part 60 Subpart JJJJ, as required in SC VII.3, and all documentation supporting any notification. **(40 CFR 60.4245(a))**
8. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling total CO<sub>2e</sub> mass emissions for EUN\_EM\_GEN, as required by SC I.7. The permittee shall keep all records on file and make them available to the Department upon request. The calculations shall be performed using the method included in Appendix A unless a new method is approved by the District Supervisor. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(j))**

## **VII. REPORTING**

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of EUN\_EM\_GEN. **(R 336.1216(1)(a)(v), R 336.1201(7)(a))**
2. The permittee shall submit a notification specifying whether EUN\_EM\_GEN will be operated in a certified or a non-certified manner to the AQD District Supervisor, in writing, within 30 days following the initial startup of EUN\_EM\_GEN and within 30 days of switching the manner of operation. **(40 CFR Part 60 Subpart JJJJ)**
3. If EUN\_EM\_GEN has not been certified by an engine manufacturer to meet the emission standards in 40 CFR 60.4231, the permittee shall submit an initial notification as required in 40 CFR 60.7(a)(1). The notification must include the following information for EUN\_EM\_GEN:
  - a. The date construction commenced;
  - b. Name and address of the owner or operator;
  - c. The address of the affected source;
  - d. Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
  - e. Engine emission control equipment; and
  - f. Fuel used.

The notification must be postmarked no later than 30 days after construction commenced for EUN\_EM\_GEN. **(40 CFR 60.7(a)(1), 40 CFR 60.4245(c))**

4. The permittee shall submit an initial notification as required in 40 CFR 63.6645(f) for EUN\_EM\_GEN. The notification must include the information in 40 CFR 63.9(b)(2)(i)-(v):
  - a. The name and address of the owner or operator;
  - b. The address (i.e., physical location) of EUN\_EM\_GEN;
  - c. An identification of the relevant standard, or other requirement, that is the basis of the notification and the source's compliance date;
  - d. A brief description of the nature, size, design, and method of operation of the source and an identification of the types of emission points within the affected source subject to the relevant standard and types of hazardous air pollutants emitted; and
  - e. A statement of whether the affected source is a major source or an area source.

The notification must also include a statement that EUN\_EM\_GEN has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions). **(40 CFR 63.9(b)(2)(i)-(v), 40 CFR 63.6590(b)(1), 40 CFR 63.6645(f))**

**VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter/Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVN_EM_GEN	14	30.0	R 336.1225, R 336.2803, R 336.2804

**IX. OTHER REQUIREMENTS**

1. The permittee shall comply with the provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subpart A and Subpart JJJJ, as they apply to EUN\_EM\_GEN. **(40 CFR Part 60 Subparts A & JJJJ)**
2. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR, Part 63, Subpart A and Subpart ZZZZ, as they apply to EUN\_EM\_GEN, upon startup. **(40 CFR Part 63 Subparts A and ZZZZ)**

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**FLEXIBLE GROUP SUMMARY TABLE**

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGTURBINES	Five natural gas-fired CTs to drive compressors that will be used to transport natural gas through pipelines. Each CT is equipped with dry ultra-low NO <sub>x</sub> burners and a combustion air inlet filter.	EUTURBINE1, EUTURBINE2, EUTURBINE3, EUTURBINE4, EUTURBINE5
FGAUXBOILERS	Six natural gas-fired auxiliary boilers to provide heat in buildings and heat fuel gas for the station and support equipment.	EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C
FGAUXHEATING	Four heaters and a furnace for comfort heating and one water heater.	EUHTR1, EUHTR2, EUHTR3, EUHTR4, EUWTRHTR, EUFURNACE
FGNEWNGBOILMACT	Gas 1 Fuel Subcategory requirements for new boilers that have a heat input capacity of less than or equal to 5 MMBTU per hour (each) at major sources of Hazardous Air Pollutants per 40 CFR Part 63, Subpart DDDDD. These new boilers must comply with this subpart upon startup.	EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C

**The following conditions apply to:**  
**FGTURBINES**

**DESCRIPTION:** Five natural gas-fired CTs to drive compressors that will be used to transport natural gas through pipelines. Each CT is equipped with dry ultra-low NO<sub>x</sub> burners and a combustion air inlet filter.

**Emission Units:** EUTURBINE1, EUTURBINE2, EUTURBINE3, EUTURBINE4, EUTURBINE5

**POLLUTION CONTROL EQUIPMENT:** Dry ultra-low NO<sub>x</sub> burners.

**I. EMISSION LIMITS**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NO <sub>x</sub> <sup>B</sup>	15 ppmvd (each unit)	Test Protocol*	EUTURBINE1, EUTURBINE2, EUTURBINE3, EUTURBINE4, EUTURBINE5	SC V.1, SC V.2, SC VI.5	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 60.4320(a) <sup>C</sup>
2. NO <sub>x</sub> <sup>D</sup>	150 ppmvd (each unit)	Test Protocol*	EUTURBINE1, EUTURBINE2, EUTURBINE3, EUTURBINE4, EUTURBINE5	SC VI.5	40 CFR 60.4320(a)
3. PM <sub>10</sub>	0.015 lb/MMBTU (each unit)	Test Protocol*	EUTURBINE1, EUTURBINE2, EUTURBINE3, EUTURBINE4, EUTURBINE5	SC V.3, SC VI.5	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
4. PM <sub>2.5</sub>	0.015 lb/MMBTU (each unit)	Test Protocol*	EUTURBINE1, EUTURBINE2, EUTURBINE3, EUTURBINE4, EUTURBINE5	SC V.3, SC VI.5	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
5. CO <sup>B</sup>	25 ppmvd (each unit)	Test Protocol*	EUTURBINE1, EUTURBINE2, EUTURBINE3, EUTURBINE4, EUTURBINE5	SC V.3, SC VI.5	R 336.1205(1)(a) & (b), R 336.2804, R 336.2810
6. GHGs as CO <sub>2e</sub>	196,998 tpy	12-month rolling time period as determined at the end of each calendar month.	FGTURBINES	SC VI.3, SC VI.5	R 336.1205(1)(a) & (b), 40 CFR 52.21(j)

ppmvd = parts per million by volume at 15 percent oxygen and on a dry gas basis

\*Test Protocol shall specify averaging time.

<sup>B</sup>Normal baseload operation is considered to be loads greater than 50 percent of peak load and at or above 0°F. These emission limits do not include startup and shutdown. Startup and shutdown is considered to be the ramping up or ramping down of the turbines through loads 50 percent or less; restrictions can be found in SC III.2 through SC III.5.

<sup>C</sup>The emission limit as required in 40 CFR 60.4320(a) is 25 ppm at 15 percent O<sub>2</sub>. SC I.1 subsumes the NSPS emission limit.

<sup>D</sup>Per Table 1 of 40 CFR Part 60 Subpart KKKK: operating at less than 75 percent of peak load or at temperatures less than 0°F.

## **II. MATERIAL LIMITS**

1. The permittee shall burn only pipeline quality natural gas in any unit in FGTURBINES. **(R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j), 40 CFR 60.4220, 40 CFR 60.4230)**
2. The pipeline quality natural gas shall not have a total sulfur content in excess of 5.0 gr of sulfur per 100 scf. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(c) & (d), 40 CFR 60.4330, 40 CFR 60.4365)**

## **III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall not operate any unit in FGTURBINES unless a MAP as described in Rule 911(2), has been submitted within 180 days of initial startup, and is implemented and maintained. The MAP shall, at a minimum, specify the following:
  - a. A complete preventative maintenance program including identification of the supervisory personnel responsible for overseeing the inspection, maintenance, and repair of air-cleaning devices, a description of the items or conditions that shall be inspected, the frequency of the inspections or repairs, and an identification of the major replacement parts that shall be maintained in inventory for quick replacement.
  - b. An identification of the source and air-cleaning device operating variables that shall be monitored to detect a malfunction or failure, the normal operating range of these variables, and a description of the method of monitoring or surveillance procedures.
  - c. A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.
  - d. An identification of the situations that may lead to the dry ultra-low NO<sub>x</sub> burners ceasing to operate, a description of the procedures that will be performed should that occur and how the situations will be minimized, and a description of how each situation will be recorded should it occur.

If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 90 days after such an event occurs. The permittee shall also amend the MAP within 90 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit the MAP and any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the MAP or amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits. **(R 336.1910, R 336.1911, R 336.2803, R 336.2804)**

2. The permittee shall not operate any unit in FGTURBINES unless the AQD District Supervisor has approved a plan that describes how emissions will be minimized during startup and shutdown. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. Unless notified by the District Supervisor within 30 business days after plan submittal, the plan shall be deemed approved. **(R 336.1911, R 336.1912, R 336.2810, 40 CFR 52.21(j), 40 CFR 60.4333(a))**
3. The permittee shall not have a combined total of more than 5 events (startup or shutdown) per clock hour for FGTURBINES. **(R 336.2803, R 336.2804)**
4. The total startup events for FGTURBINES shall not exceed 500 startups per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(1)(a) & (b), R 336.2810, 40 CFR 52.21(j))**
5. The total shutdown events for FGTURBINES shall not exceed 500 shutdowns per 12-month rolling time period as determined at the end of each calendar month. **(R 336.1205(1)(a) & (b), R 336.2810, 40 CFR 52.21(j))**

## **IV. DESIGN/EQUIPMENT PARAMETERS**

1. The maximum nominal rating of each unit in FGTURBINES shall not exceed 10,504 HP (ISO). **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 228.2810, 40 CFR 52.21(j))**



2. The permittee shall not operate any unit in FGTURBINES unless its respective dry ultra-low NO<sub>x</sub> burners and combustion air inlet filters are installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining each turbine within FGTURBINES in accordance with an approved MAP for FGTURBINES as required in SC III.1. **(R 336.1205(1)(a) & (b), R 336.1910, R 336.2803, R 336.2804, R 336.2810)**
3. The permittee shall install, calibrate, maintain and operate in a satisfactory manner a device to monitor and record the natural gas flow rate for each turbine in FGTURBINES on a continuous basis. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(j))**

#### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. Within 60 days after achieving the maximum production rate, but not later than 180 days after commencement of initial startup, the permittee shall verify NO<sub>x</sub> emission rates from each unit in FGTURBINES, as required by federal Standards of Performance for New Stationary Sources, by testing at owner's expense, in accordance with 40 CFR 60.4400 of 40 CFR Part 60 Subparts A and KKKK. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205(1)(a) & (b), R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, R 336.2810, 40 CFR 60.4375(b), 40 CFR 60.4400(a), 40 CFR Part 60 Subpart KKKK)**
2. To demonstrate continuous compliance, the permittee shall perform subsequent performance tests to verify NO<sub>x</sub> emission rates from each unit in FGTURBINES, as required by federal Standards of Performance for New Stationary Sources, by testing at owner's expense in accordance with 40 CFR 60.4400 of 40 CFR Part 60 Subparts A and KKKK:
  - a. If the previous performance test exceeded 75 percent of the NO<sub>x</sub> emission limit, SC I.1, then the permittee shall perform annual performance tests which are no more than 14 calendar months apart.
  - b. If the previous performance test was less than or equal to 75 percent of the NO<sub>x</sub> emission limit, SC I.1, then the permittee shall perform subsequent performance tests once every two years which are no more than 26 calendar months apart.

No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205(1)(a) & (b), R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, R 336.2810, 40 CFR 60.4340(a), 40 CFR 60.4375(b), 40 CFR 60.4400(a), 40 CFR Part 60 Subpart KKKK)**

3. Within 180 days after commencement of initial startup, the permittee shall verify PM<sub>10</sub>, PM<sub>2.5</sub>, and CO emission rates from each unit in FGTURBINES at maximum routine operating conditions, by testing at owner's expense, in accordance with Department requirements. The permittee shall complete the required testing once every five years of operation, thereafter. Upon approval of the AQD District Supervisor, subsequent testing may be conducted for a single unit of FGTURBINES as a representative unit. The permittee shall not test the same representative unit in subsequent tests unless approved or requested by the AQD District Supervisor. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test. **(R 336.1205(1)(a) & (b), R 336.2001, R 336.2003, R 336.2004, R 336.2803, R 336.2804, R 336.2810)**

## **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j))**
2. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for FGTURBINES on a monthly basis. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(j))**
3. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling total CO<sub>2e</sub> mass emissions for FGTURBINES, as required by SC I.6. The permittee shall keep all records on file and make them available to the Department upon request. The calculations shall be performed using the method included in Appendix A unless a new method is approved by the District Supervisor. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(j))**
4. The permittee shall keep, in a satisfactory manner, records of the number of events per clock hour and the monthly number of startup events and shutdown events for FGTURBINES to show compliance with SC III.3, SC III.4, and SC III.5. Records must be kept in a format acceptable to the AQD District Supervisor. The permittee shall calculate and keep, in a satisfactory manner, records of 12-month rolling startup events and shutdown events for FGTURBINES, as required by SC III.4 and SC III.5. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j))**
5. The permittee shall maintain records of all information necessary for all notifications and reports as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit for FGTURBINES. This information shall include, but shall not be limited to the following:
  - a. Compliance tests and any testing required under the special conditions of this permit;
  - b. Monitoring data;
  - c. Total sulfur content of the natural gas as required by 40 CFR 60.4365(a);
  - d. Verification of the nominal rating in ISO HP;
  - e. Identification, type, and amount of fuel combusted on a calendar month basis;
  - f. All records required by 40 CFR 60.7, including the initial startup notification and performance tests;
  - g. Records of the number of all startup and shutdown events per turbine;
  - h. All calculations necessary to show compliance with the limits contained in this permit;
  - i. All records related to, or as required by, the MAP.

All of the above information shall be stored in a format acceptable to the AQD District Supervisor and shall be consistent with the requirements of 40 CFR 60.7. **(R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1702(a), R 336.1912, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j), 40 CFR 60.7, 40 CFR 60.4365(a), 40 CFR Part 60 Subpart KKKK)**

**VII. REPORTING**

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of each unit in FGTURBINES. **(R 336.1216(1)(a)(v), R 336.1201(7)(a))**
2. The permittee shall provide written notification of the date construction commences and the actual date of initial startup of each unit in FGTURBINES, in accordance with 40 CFR 60.7. The permittee shall submit this notification to the AQD District Supervisor within the time frames specified in 40 CFR 60.7. **(40 CFR 60.7(a))**
3. The permittee shall submit all notifications in 40 CFR 63.9(b) that apply by the dates specified. The Initial Notification shall be submitted no later than 120 calendar days after becoming subject to 40 CFR Part 63 Subpart YYYY. **(40 CFR 63.6095(d), 40 CFR 63.6145)**

**VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVTURBINE1	54	95.0	R 336.1225, R 336.2803, R 336.2804
2. SVTURBINE2	54	95.0	R 336.1225, R 336.2803, R 336.2804
3. SVTURBINE3	54	95.0	R 336.1225, R 336.2803, R 336.2804
4. SVTURBINE4	54	95.0	R 336.1225, R 336.2803, R 336.2804
5. SVTURBINE5	54	95.0	R 336.1225, R 336.2803, R 336.2804

**IX. OTHER REQUIREMENTS**

1. The permittee shall comply with all provisions of the federal Standards of Performance for New Stationary Sources as specified in 40 CFR Part 60 Subparts A and KKKK, as they apply to each unit in FGTURBINES. **(40 CFR Part 60 Subparts A & KKKK)**
2. The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and YYYY, as they apply to each unit in FGTURBINES. **(40 CFR Part 63 Subparts A & YYYY)**

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**The following conditions apply to:**  
**FGAUXBOILERS**

**DESCRIPTION:** Six natural gas-fired auxiliary boilers to provide heat in buildings and heat fuel gas for the station and support equipment.

**Emission Units:** EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C

**POLLUTION CONTROL EQUIPMENT:** Ultra-Low NO<sub>x</sub> burners.

**I. EMISSION LIMITS**

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method	Underlying Applicable Requirements
1. NO <sub>x</sub>	20 ppmvd at 3% O <sub>2</sub> (each unit)	Test Protocol*	EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B	SC VI.4	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
2. NO <sub>x</sub>	9 ppmvd at 3% O <sub>2</sub> (each unit)	Test Protocol*	EUAUXBOIL2C, EUAUXBOIL3C	SC VI.4	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
3. PM <sub>10</sub>	0.52 lb/MMscf (each unit)	Test Protocol*	EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C	SC VI.4	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
4. PM <sub>2.5</sub>	0.52 lb/MMscf (each unit)	Test Protocol*	EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C	SC VI.4	R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810
5. CO	84 lb/MMscf (each unit)	Test Protocol*	EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C	SC VI.4	R 336.1205(1)(a) & (b), R 336.2804, R 336.2810
6. GHGs as CO <sub>2e</sub>	7,324 tpy	12-month rolling time period as determined at the end of each calendar month.	FGAUXBOILERS	SC VI.3, SC VI.4	R 336.1205(1)(a) & (b), 40 CFR 52.21(j)

\*Test Protocol shall specify averaging time.

**II. MATERIAL LIMITS**

- The permittee shall burn only pipeline quality natural gas in FGAUXBOILERS. (R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j))

### **III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee shall operate and maintain each boiler in FGAUXBOILERS, including associated air pollution control equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions and comply with Table 3 of 40 CFR Part 63 Subpart DDDDD. **(R 336.1910, R 336.1911, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j))**

### **IV. DESIGN/EQUIPMENT PARAMETERS**

1. The maximum design heat input capacity for EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, and EUAUXBOIL3B shall not exceed a maximum of 3 MMBTU per hour each, on a fuel heat input basis. The maximum design heat input capacity for EUAUXBOIL2C, EUAUXBOIL3C shall not exceed a maximum of 1 MMBTU per hour each, on a fuel heat input basis. **(R 336.1205(1)(a) & (b), R 336.1225, R 336.2803, R 336.2804, R 228.2810, 40 CFR 52.21(j))**
2. The permittee shall not operate any unit in FGAUXBOILERS unless its respective ultra-low NOx burners are installed, maintained, and operated in a satisfactory manner. Satisfactory manner includes operating and maintaining the air pollution control equipment in accordance with SC III.1. **(R 336.1205(1)(a) & (b), R 336.1910, R 336.2803, R 336.2804, R 228.2810)**
3. The permittee shall install, calibrate, maintain and operate, in a satisfactory manner, a device to monitor and record the natural gas flow rate for FGAUXBOILERS on a continuous basis. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(j))**

### **V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

NA

### **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(R 336.1201(3))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j))**
2. The permittee shall monitor and record, in a satisfactory manner, the natural gas usage for FGAUXBOILERS on a monthly basis. The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(j))**
3. The permittee shall calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling total CO<sub>2</sub>e mass emissions for FGAUXBOILERS, as required by SC I.6. The permittee shall keep all records on file and make them available to the Department upon request. The calculations shall be performed using the method included in Appendix A unless a new method is approved by the District Supervisor. **(R 336.1205(1)(a) & (b), 40 CFR 52.21(j))**
4. The permittee shall maintain records of all information necessary for all notifications and reports as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of this permit. This information shall include, but shall not be limited to the following:
  - a. Compliance tests and any testing required under the special conditions of this permit;
  - b. Monitoring data;
  - c. Verification of heat input capacity required to show compliance with SC IV.1;
  - d. All calculations or documents necessary to show compliance with the limits contained in this permit.

The permittee shall keep all records on file and make them available to the Department upon request. **(R 336.1205(1)(a) & (b), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j))**

**VII. REPORTING**

1. Within 30 days after completion of the installation, construction, reconstruction, relocation, or modification authorized by this Permit to Install, the permittee or the authorized agent pursuant to Rule 204, shall notify the AQD District Supervisor, in writing, of the completion of the activity. Completion of the installation, construction, reconstruction, relocation, or modification is considered to occur not later than commencement of trial operation of each unit in FGAUXBOILERS. **(R 336.1216(1)(a)(v), R 336.1201(7)(a))**

**VIII. STACK/VENT RESTRICTIONS**

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

<b>Stack &amp; Vent ID</b>	<b>Maximum Exhaust Diameter/Dimensions (inches)</b>	<b>Minimum Height Above Ground (feet)</b>	<b>Underlying Applicable Requirements</b>
1. SVAUXBOIL2A	8	30.0	R 336.1225, R 336.2803, R 336.2804
2. SVAUXBOIL3A	8	50.0	R 336.1225, R 336.2803, R 336.2804
3. SVAUXBOIL2B	8	30.0	R 336.1225, R 336.2803, R 336.2804
4. SVAUXBOIL3B	8	50.0	R 336.1225, R 336.2803, R 336.2804
5. SVAUXBOIL2C	6	30.0	R 336.1225, R 336.2803, R 336.2804
6. SVAUXBOIL3C	6	30.0	R 336.1225, R 336.2803, R 336.2804

**IX. OTHER REQUIREMENTS**

1. The permittee shall comply with all provisions of the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and DDDDD, as they apply to each unit in FGAUXBOILERS. **(40 CFR Part 63 Subparts A & DDDDD)**

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**The following conditions apply to:**  
**FGAUXHEATING**

**DESCRIPTION:** Four heaters and a furnace for comfort heating and one water heater.

**Emission Units:** EUHTR1, EUHTR2, EUHTR3, EUHTR4, EUWTRHTR, EUFURNACE

**POLLUTION CONTROL EQUIPMENT:** NA

**I. EMISSION LIMITS**

NA

**II. MATERIAL LIMITS**

1. The permittee shall burn only pipeline quality natural gas in FGAUXHEATING. (R 336.1205(1)(a) & (b), R 336.1224, R 336.1225, R 336.1702(a), R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j))

**III. PROCESS/OPERATIONAL RESTRICTIONS**

NA

**IV. DESIGN/EQUIPMENT PARAMETERS**

1. The maximum design heat input capacity for EUHTR1, EUHTR2, EUHTR3, and EUHTR4 shall not exceed 0.1 MMBTU per hour each, on a fuel heat input basis. The maximum design heat input capacity for EUWTRHTR shall not exceed 0.125 MMBTU per hour on a fuel heat input basis. The maximum design heat input capacity for EUFURNACE shall not exceed 0.2075 MMBTU per hour on a fuel heat input basis. (R 336.1205(1)(a) & (b), R 336.1225, R 336.2803, R 336.2804, R 336.2810, 40 CFR 52.21(j))

**V. TESTING/SAMPLING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

NA

**VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. The permittee shall keep manufacturer documentation showing the maximum heat input for each unit in FGAUXHEATING. (R 336.1205(1)(a)&(b), R 336.1225, R 336.2803, R 336.2804, R 228.2810, 40 CFR 52.21(j))

**VII. REPORTING**

NA

**VIII. STACK/VENT RESTRICTIONS**

NA

**IX. OTHER REQUIREMENTS**

NA

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**The following conditions apply to:**  
**FGNEWNGBOILMACT**

**DESCRIPTION:** Gas 1 Fuel Subcategory requirements for new boilers that have a heat input capacity of less than or equal to 5 MMBTU per hour (each) at major sources of Hazardous Air Pollutants per 40 CFR Part 63, Subpart DDDDD. These new boilers must comply with this subpart upon startup.

**Emission Units:** EUAUXBOIL2A, EUAUXBOIL3A, EUAUXBOIL2B, EUAUXBOIL3B, EUAUXBOIL2C, EUAUXBOIL3C

**POLLUTION CONTROL EQUIPMENT:** NA

**I. EMISSION LIMITS**

NA

**II. MATERIAL LIMITS**

1. The permittee shall only burn pipeline quality natural gas. **(40 CFR 63.7499(I))**

**III. PROCESS/OPERATIONAL RESTRICTIONS**

1. The permittee must meet the requirements in paragraphs (a)(1) and (3) of 40 CFR 63.7500, as listed below, except as provided in paragraphs (b) and (e) of 40 CFR 63.7500, stated in SC III.2 and SC III.3. The permittee must meet these requirements at all times the affected unit is operating. **(40 CFR 63.7500(a))**
  - a. The permittee must meet each work practice standard in Table 3 of 40 CFR Part 63, Subpart DDDDD that applies to the boiler, for each boiler at the source. **(40 CFR 63.7500(a)(1))**
  - b. At all times, the permittee must operate and maintain any affected source (as defined in 40 CFR 63.7490, stated in SC IX.1), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. **(40 CFR 63.7500(a)(3))**
2. As provided in 40 CFR 63.6(g), EPA may approve use of an alternative to the work practice standards. **(40 CFR 63.7500(b))**
3. The permittee must:
  - a. Complete a tune-up every 5 years as specified in 40 CFR 63.7540, stated in SC IX.5. **(40 CFR 63.7500(e))**
  - b. Conduct the first 5-year tune-up no later than 61 months after the initial startup of the new or reconstructed boiler. **(40 CFR 63.7510(g), 40 CFR 63.7515(d))**
  - c. Conduct a 5-year performance tune-up according to 40 CFR 63.7540(a)(12), stated in SC IX.5.b. Each 5-year tune-up specified in 40 CFR 63.7540(a)(12) must be conducted no more than 61 months after the previous tune-up. **(40 CFR 63.7510(g), 40 CFR 63.7515(d))**

**IV. DESIGN/EQUIPMENT PARAMETERS**

NA



## **V. TESTING/SAMPLING**

NA

## **VI. MONITORING/RECORDKEEPING**

Records shall be maintained on file for a period of five years. **(40 CFR 63.7560(b))**

1. The permittee must keep records according to paragraph (a)(1) of 40 CFR 63.7555, as listed below. **(40 CFR 63.7555(a))**
  - a. A copy of each notification and report that the permittee submitted to comply with 40 CFR Part 63, Subpart DDDDD, including all documentation supporting any Initial Notification or semiannual compliance report that the permittee submitted, according to the requirements in 40 CFR 63.10(b)(2)(xiv). **(40 CFR 63.7555(a)(1))**
2. The permittee's records must be in a form suitable and readily available for expeditious review, according to 40 CFR 63.10(b)(1). **(40 CFR 63.7560(a))**
3. The permittee must keep each record on site, or they must be accessible from on-site (for example, through a computer network), for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to 40 CFR 63.10(b)(1). The permittee can keep the records off site for the remaining 3 years. **(40 CFR 63.7560(b) & (c))**

## **VII. REPORTING**

1. The permittee must submit to the Administrator all of the notifications in 40 CFR 63.9(b) through (h) that apply to the permittee by the dates specified. **(40 CFR 63.7495(d), 40 CFR 63.7545(a))**
2. As specified in 40 CFR 63.9(b)(5), if the permittee starts up the new or reconstructed affected source on or after January 31, 2013, the permittee must submit an Initial Notification not later than 15 days after the actual date of startup of the affected source. **(40 CFR 63.7495(d), 40 CFR 63.7545(c))**
3. Unless the EPA Administrator has approved a different schedule for submission of reports under 40 CFR 63.10(a), the permittee must submit each report, according to paragraph (h) of 40 CFR 63.7550, stated in SC VII.5, by the date in Table 9 of 40 CFR Part 63, Subpart DDDDD and according to the requirements in paragraphs (b)(1) through (4) of 40 CFR 63.7550, as listed below. For units that are subject only to a requirement to conduct a 5-year tune-up according to 40 CFR 63.7540(a)(12), stated in SC IX.5.b, and not subject to emission limits or operating limits, the permittee may submit only a 5-year compliance report, as specified in paragraphs (b)(1) through (4) of 40 CFR 63.7550, as listed below, instead of a semi-annual compliance report. **(40 CFR 63.7550(a) & (b))**
  - a. The first compliance report must cover the period beginning on the compliance date specified for each boiler in 40 CFR 63.7495, stated in SC IX.3, and ending on December 31 within 5 years after the compliance date that is specified for the source in 40 CFR 63.7495, stated in SC IX.3. **(40 CFR 63.7550(b)(1))**
  - b. The first semi-annual compliance report must be postmarked or submitted no later than September 15 or March 15, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for each boiler in 40 CFR 63.7495, stated in SC IX.3. The first 5-year compliance report must be postmarked or submitted no later than March 15. **(40 CFR 63.10(a)(5), 40 CFR 63.7550(b)(2), 40 CFR 63.7550(b)(5))**
  - c. Each subsequent semi-annual compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31. 5-year compliance reports must cover the 5-year period from January 1 to December 31. **(40 CFR 63.7550(b)(3))**
  - d. Each subsequent semi-annual compliance report must be postmarked or submitted no later than September 15 or March 15, whichever date is the first date following the end of the semiannual reporting period. 5-year compliance reports must be postmarked or submitted no later than March 15. **(40 CFR 63.10(a)(5), 40 CFR 63.7550(b)(4), 40 CFR 63.7550(b)(5))**

4. The permittee must include the following information in the compliance report. **(40 CFR 63.7550(a) & (c))**
  - a. If the facility is subject to the requirements of a tune up the permittee must submit a compliance report with the information in paragraphs (c)(5)(i) through (iii), (xiv), and (xvii) of 40 CFR 63.7550. **(40 CFR 63.7550(c)(1))**
  - b. 40 CFR 63.7550(c)(5) is as follows:
    - i. Company and Facility name and address. **(40 CFR 63.7550(c)(5)(i))**
    - ii. Process unit information, emissions limitations, and operating parameter limitations. **(40 CFR 63.7550(c)(5)(ii))**
    - iii. Date of report and beginning and ending dates of the reporting period. **(40 CFR 63.7550(c)(5)(iii))**
    - iv. Include the date of the most recent tune-up for each unit subject to only the requirement to conduct a 5-year tune-up according to 40 CFR 63.7540(a)(12), stated in SC IX.5.b. Include the date of the most recent burner inspection if it was not done on a 5-year period and was delayed until the next scheduled or unscheduled unit shutdown. **(40 CFR 63.7550(c)(5)(xiv))**
    - v. Statement by a responsible official with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report. **(40 CFR 63.7550(c)(5)(xvii))**
5. The permittee must submit the reports according to the procedures specified in paragraph (h)(3) of 40 CFR 63.7550, as listed below. **(40 CFR 63.7550(h))**
  - a. The permittee must submit all reports required by Table 9 of 40 CFR Part 63, Subpart DDDDD electronically to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's CDX.) The permittee must use the appropriate electronic report in CEDRI for 40 CFR Part 63, Subpart DDDDD. Instead of using the electronic report in CEDRI for 40 CFR Part 63, Subpart DDDDD, the permittee may submit an alternate electronic file consistent with the XML schema listed on the CEDRI Web site (<http://www.epa.gov/ttn/chief/cedri/index.html>), once the XML schema is available. If the reporting form specific to 40 CFR Part 63, Subpart DDDDD is not available in CEDRI at the time that the report is due, the permittee must submit the report to the Administrator at the appropriate address listed in 40 CFR 63.13. The permittee must begin submitting reports via CEDRI no later than 90 days after the form becomes available in CEDRI. **(40 CFR 63.7550(h)(3))**

#### **VIII. STACK/VENT RESTRICTIONS**

NA

#### **IX. OTHER REQUIREMENTS**

1. 40 CFR Part 63, Subpart DDDDD applies to new or reconstructed affected sources as described in paragraph (a)(2) of 40 CFR 63.7490, as listed below. **(40 CFR 63.7490(a))**
  - a. The affected source of 40 CFR Part 63, Subpart DDDDD is each new or reconstructed industrial, commercial, or institutional boiler, as defined in 40 CFR 63.7575, located at a major source. **(40 CFR 63.7490(a)(2))**
2. A boiler is new if the permittee commences construction of the boiler after June 4, 2010, and the permittee meets the applicability criteria at the time the permittee commences construction. **(40 CFR 63.7490(b))**
3. If the permittee has a new or reconstructed boiler, the permittee must comply with 40 CFR Part 63, Subpart DDDDD upon startup of each boiler. **(40 CFR 63.7495(a))**
4. The permittee must be in compliance with the work practice standards of 40 CFR Part 63, Subpart DDDDD. **(40 CFR 63.7505(a))**

5. The permittee must demonstrate continuous compliance with the work practice standards in Table 3 of 40 CFR Part 63, Subpart DDDDD that applies according to the methods specified in paragraphs (a)(10) through (13) of 40 CFR 63.7540, as listed below. **(40 CFR 63.7540(a))**
  - a. The permittee must conduct tune-ups of the boiler to demonstrate continuous compliance as specified in paragraphs (a)(10)(i) through (vi) of 40 CFR 63.7540, as listed below. **(40 CFR 63.7540(a)(10))**
    - i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the permittee may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment. **(40 CFR 63.7540(a)(10)(i))**
    - ii. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available. **(40 CFR 63.7540(a)(10)(ii))**
    - iii. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the permittee may delay the inspection until the next scheduled unit shutdown). **(40 CFR 63.7540(a)(10)(iii))**
    - iv. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NO<sub>x</sub> requirement to which the unit is subject. **(40 CFR 63.7540(a)(10)(iv))**
    - v. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer. **(40 CFR 63.7540(a)(10)(v))**
    - vi. Maintain on-site and submit, if requested by the Administrator, a report containing the information in paragraphs (a)(10)(vi)(A) through (C) of 40 CFR 63.7540, as listed below. **(40 CFR 63.7540(a)(10)(vi))**
      - A. The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler. **(40 CFR 63.7540(a)(10)(vi)(A))**
      - B. A description of any corrective actions taken as a part of the tune-up. **(40 CFR 63.7540(a)(10)(vi)(B))**
      - C. The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit. **(40 CFR 63.7540(a)(10)(vi)(C))**
  - b. If the boiler has a heat input capacity of less than or equal to 5 million Btu per hour and the unit is in the units designed to burn gas 1 subcategory, the permittee must conduct a tune-up of the boiler every 5 years as specified in paragraphs (a)(10)(i) through (vi) of 40 CFR 63.7540 to demonstrate continuous compliance. The permittee may delay the burner inspection specified in paragraph (a)(10)(i) of 40 CFR 63.7540 until the next scheduled or unscheduled unit shutdown, but the permittee must inspect each burner at least once every 72 months. **(40 CFR 63.7540(a)(12))**
  - c. If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup. **(40 CFR 63.7540(a)(13))**
6. Table 10 of 40 CFR Part 63, Subpart DDDDD shows which parts of the General Provisions in 40 CFR 63.1 through 63.15 applies to the permittee. **(40 CFR 63.7565)**

**Footnotes:**

<sup>1</sup>This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

**APPENDIX A**  
**CO<sub>2</sub>e Emission Calculations**

**For EUN\_EM\_GEN:**

$$\text{CO}_2\text{e emissions (tons/month)} = [\text{Fuel Usage (MMscf/month)} \times \text{Higher Heating Value (MMBTU/MMscf)}] \times [\text{CO}_2 \text{ EF (kg/MMBTU)} \times \text{CO}_2 \text{ GWP} + \text{CH}_4 \text{ EF (kg/MMBTU)} \times \text{CH}_4 \text{ GWP} + \text{N}_2\text{O EF (kg/MMBTU)} \times \text{N}_2\text{O GWP}] \times 2.2046 \text{ lb/kg} \times 1/2000 \text{ (ton/lb)}$$

Where:

Fuel Usage (gallons/month) = monthly fuel usage data

Heat Content (MMBTU/gallons) = standard value in AP-42 for natural gas or supplier data, if available

CO<sub>2</sub> EF (kg/MMBTU) = 84.866, related to the manufacturer specification sheet

CH<sub>4</sub> EF (kg/MMBTU) = emission factors from 40 CFR Part 98, Subpart C, Table C-2 (January 1, 2014)

N<sub>2</sub>O EF (kg/MMBTU) = emission factors from 40 CFR Part 98, Subpart C, Table C-2 (January 1, 2014)

CO<sub>2</sub> GWP = global warming potential from 40 CFR Part 98, Subpart A, Table A-1 (January 1, 2014)

CH<sub>4</sub> GWP = global warming potential from 40 CFR Part 98, Subpart A, Table A-1 (January 1, 2014)

N<sub>2</sub>O GWP = global warming potential from 40 CFR Part 98, Subpart A, Table A-1 (January 1, 2014)

**For FGTURBINES and FGAUXBOILERS:**

$$\text{CO}_2\text{e emissions (tons/month)} = [\text{Fuel Usage (MMscf/month)} \times \text{Higher Heating Value (MMBTU/MMscf)}] \times [\text{CO}_2 \text{ EF (kg/MMBTU)} \times \text{CO}_2 \text{ GWP} + \text{CH}_4 \text{ EF (kg/MMBTU)} \times \text{CH}_4 \text{ GWP} + \text{N}_2\text{O EF (kg/MMBTU)} \times \text{N}_2\text{O GWP}] \times 2.2046 \text{ lb/kg} \times 1/2000 \text{ (ton/lb)}$$

Where:

Fuel Usage (MMscf/month) = monthly fuel usage data from fuel flow meter

Heat Content (MMBTU/MMscf) = standard value in AP-42 for natural gas or supplier data, if available

CO<sub>2</sub> EF (kg/MMBTU) = emission factors from 40 CFR Part 98, Subpart C, Table C-1 (January 1, 2014)

CH<sub>4</sub> EF (kg/MMBTU) = emission factors from 40 CFR Part 98, Subpart C, Table C-2 (January 1, 2014)

N<sub>2</sub>O EF (kg/MMBTU) = emission factors from 40 CFR Part 98, Subpart C, Table C-2 (January 1, 2014)

CO<sub>2</sub> GWP = global warming potential from 40 CFR Part 98, Subpart A, Table A-1 (January 1, 2014)

CH<sub>4</sub> GWP = global warming potential from 40 CFR Part 98, Subpart A, Table A-1 (January 1, 2014)

N<sub>2</sub>O GWP = global warming potential from 40 CFR Part 98, Subpart A, Table A-1 (January 1, 2014)